

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.84(l) because the reference characters and some lines in the context of the drawing, particularly in figs. 2 and 3, are not uniformly thick and well-defined.

The drawings are also objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the separating means of claim 37 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Mennenga, US 4,472,962 (Mennenga).

In regard to claim 20:

Mennenga discloses a leak detector comprising: an inlet connected to detector 2; a high-vacuum pump 1; a test gas detector 2 connected to an inlet of the high-vacuum pump; a backing pump 7 connected to an outlet area of the high-vacuum pump; and a test gas line 8 running between the inlet of the leak detector and the backing pump, said test gas line being connected to the outlet area 3 of the high-vacuum pump via a line section 12 and in which the line section and the backing pump are connected via separate connection ports 4 and 10 to the outlet area of the high-vacuum pump.

In regard to claims 25 and 26:

Mennenga further discloses that the high-vacuum pump is a turbo-molecular pump (col. 1, ll. 6-9) equipped with at least one additional inlet 10.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-24 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mennenga.

Mennenga discloses all of the limitations of claims 21-24 and 27-28 except for two separate connection ports connected to an outlet chamber and two additional gas inlets on the TMP. However, this limitation would constitute a mere duplication of parts in view of the connection ports 4 and 10 connected to an outlet chamber and the additional gas inlet disclosed by Mennenga and discussed above. Mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *See In re Harza*, 274 F.2d 669 (CCPA 1960).

Claims 29-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochia, US 5,561,240 (Ochiai), in view of Mennenga .

Ochiai discloses the following:

In regard to claims 29-31:

Ochiai teaches a high-vacuum pump 2 that is a compound vacuum pump consisting of a TMP stage 2c and a molecular pumping stage 2d, wherein each stage includes an additional test gas inlet 9a, 9b. Limitations that are only made preferable in a claim do not add patentable weight to the claim, but even so, Ochiai teaches that the test gas connection of the molecular stage is at about half the height of the stage (see fig. 3).

In regard to claim 33:

There is an annular channel 2k at the level of the gas test connection port.

In regard to claim 34:

The molecular pumping stage is of a multi-stage design (see the two sets of rotors 2f and stators 2l).

In regard to claim 35:

There is connected to a first molecular pumping stage with a pumping action axially in the direction of the chassis, a second molecular pumping stage which has an opposing direction of the pumping action (see fig. 4, both axial but in opposite directions) such that the outlet area 2k of the high-vacuum pump has a distance from

the chassis and is connected through an annular chamber to the connection port to which the backing pump is connected and where also the connection port connected via the valve with the test gas line is connected to the annular chamber (see fig. 3).

In regard to claims 36 and 37:

The outlet area of the high-vacuum pump is defined by a substantially cylindrical chamber (surrounding shaft 2h) into which the second molecular pumping stage opens out and which is connected to the annular chamber 2k, and the rotary shaft 2h may be interpreted as a separating means in the annular chamber.

Mennenga teaches all of the limitations substantially as claimed and as discussed above, and it would have been obvious to one of ordinary skill in the art that substituting the leak detection system of the compound turbo-molecular pump of Ochiai with the low pressure leak detection system of Mennenga would provide predictable results.

In regard to claims 32, 38 and 39:

The combination teaches all of the limitations of claims 32, 38 and 39 except for an additional connection port provided at the same level as the test gas connection port, and that each port is located at the same height and is arranged at an angle between 35 and 180 degrees, whereby specifically they are opposite each other. However, this limitation would constitute a mere duplication of parts in view of the connection ports 4

and 10 connected to an outlet chamber and the additional gas inlet disclosed by Mennenga and discussed above. Mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *See In re Harza*, 274 F.2d 669 (CCPA 1960). Furthermore, the angles, both generally at 35-180 and specific at opposite, would have been obvious to one of ordinary skill in the art as a matter of obvious engineering design choice, Depending on the constraints of the system as to what position of the outlet would be most convenient.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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